MATHEMATICS CROSSWALK
2008 MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 3

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL				
Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	1	Express whole numbers through six digits using and connecting multiple representations.	1	Read whole numbers in contextual situations (through six-digit numbers).
			2	Identify six-digit whole numbers in or out of order.
			3	Write whole numbers through six-digits in or out of order.
			4	State whole numbers, through six-digits, with correct place value, by using models, illustrations, symbols, or expanded notation (e.g., 53,941 = 50,000 + 3,000 + 900 + 40 +1).
			5	Construct models to represent place value concepts for the one's, ten's, and hundred's places.
			6	Apply expanded notation to model place value through 9,999 (e.g., 5,378 = 5,000 + 300 + 70 + 8).
			M04-S1C1-02	Identify whole numbers in or out of order.
			M04-S1C1-03	Write whole numbers in or out of order.

* This performance objective is new to the 2008 Mathematics Standard Articulated by Grade Level.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	2	Compare and order whole numbers through six digits by applying the concept of place value.	8	Compare two whole numbers, through six-digits.
			9	Order three or more whole numbers through six-digit numbers (least to greatest, or greatest to least).
			M04-S1C1-08	Order three or more whole numbers.
	3	Count and represent money using coins and bills to $100.00.	15	Count amounts of money through $20.00 using pictures or actual bills and coins.
	4	Sort whole numbers into sets and justify the sort.	7	Sort whole numbers into sets containing only odd numbers or only even numbers.
	5	Express benchmark fractions as fair sharing, parts of a whole, or parts of a set.	10	Make models that represent proper fractions (halves, thirds, fourths, eighths, and tenths).
			11	Identify symbols, words, or models that represent proper fractions (halves, thirds, fourths, eighths and tenths).
			12	Use proper fractions in contextual situations.
			M01-S1C1-14	Make models that represent given fractions (halves).
			M01-S1C1-15	Identify in symbols and in words a model that is divided into equal fractional parts (halves).
			M02-S1C1-14	Make models that represent given fractions (halves and fourths).
			M02-S1C1-15	Identify in symbols and words a model that is divided into equal fractional parts (halves and fourths).

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	6	Compare and order benchmark fractions.	13	Compare two proper fractions with like denominators.
			14	Order three or more proper fractions with like denominators (halves, thirds, fourths, eighths, and tenths).
	M04-S1C2-01	**Moved to Grade 4**	16	Use decimals through hundredths in contextual situations.
	M04-S1C1-04	**Moved to Grade 4**	17	Compare two decimals, through hundredths, using models, illustrations, or symbols.
	M04-S1C1-04	**Moved to Grade 4**	18	Order three or more decimals, through hundredths, using models, illustrations, or symbols.
	M05-S1C1-01	**Moved to Grade 5**	19	Determine the equivalency among decimals, fractions, and percents (e.g., half-dollar = 50¢ = 50% and 1/4 = 0.25 = 25%).
	M04-S1C1-02	**Moved to Grade 4**	20	Identify whole-number factors and/or pairs of factors for a given whole number through 24.
	M04-S1C1-02	**Moved to Grade 4**	21	Determine multiples of a given whole number with products through 24 (skip counting).

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations	1	Add and subtract whole numbers to four digits.	1	Demonstrate the process of subtraction using manipulatives through three-digit whole numbers.
			2	Add two three-digit whole numbers.
			3	Subtract two three-digit whole numbers.
			4	Add a column of numbers.
			M04-S1C2-01	Add whole numbers.
			M04-S1C2-02	Subtract whole numbers.
	2	*Create and solve word problems based on addition, subtraction, multiplication, and division.*		
	3	Demonstrate the concept of multiplication and division using multiple models.	7	Demonstrate the process of multiplication as repeatedly adding the same number, counting by multiples, combining equal sets, and making arrays.
			8	Demonstrate the process of division with one-digit divisors (separating elements of a set into smaller equal sets, sharing equally, or repeatedly subtracting the same number).
	4	Demonstrate fluency of multiplication and division facts through 10.	9	Demonstrate families of equations for multiplication and division through 9s.
			10	State multiplication and division facts through 9s.
	5	Apply and interpret the concept of multiplication and division as inverse operations to solve problems.	9	Demonstrate families of equations for multiplication and division through 9s.
			12	Identify multiplication and division as inverse operations.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations	6	*Describe the effect of operations (multiplication and division) on the size of whole numbers.*		
	7	Apply commutative, identity, and zero properties to multiplication and apply the identity property to division.	11	Demonstrate the commutative and identity properties of multiplication.
			13	Apply grade-level appropriate properties to assist in computation.
		REMOVED (This skill is required throughout the standard).	5	Select the grade-level appropriate operation to solve word problems.
		REMOVED (This skill is required throughout the standard).	6	Solve word problems using grade-level appropriate operations and numbers.
		REMOVED	14	Apply the symbols: ×, ÷, /, ∗, %, and the grouping symbols ( ) and “,”.
		REMOVED (This skill is required throughout the standard).	15	Use grade-level appropriate mathematical terminology.
	M04-S1C2-01	**Moved to Grade 4**	16	Add or subtract fractions with like denominators (halves, thirds, fourths, eighths, and tenths) appropriate to grade level.
	M04-S1C2-01	**Moved to Grade 4**	17	Apply addition and subtraction in contextual situations, through $20.00.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
3. Estimation	1	Make estimates appropriate to a given situation or computation with whole numbers.	1	Solve grade-level appropriate problems using estimation.
			5	Evaluate the reasonableness of estimated measures.
			M02-S1C3-01	Solve problems using a variety of mental computations and reasonable estimation.
			M02-S1C3-04	Evaluate the reasonableness of an estimate.
	M03-S4C4-02	**Moved to Strand 4 Concept 4**	2	Estimate length and weight using U.S. customary units.
	M03-S4C4-02	**Moved to Strand 4 Concept 4**	3	Record estimated and actual linear measurements for real-life objects (e.g., length of fingernail; height of desk).
	M03-S4C4-02	**Moved to Strand 4 Concept 4**	4	Compare estimations of appropriate measures to the actual measures.

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Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Data Analysis (Statistics)	1	Collect, record, organize, and display data using frequency tables, single bar graphs, or single line graphs.	2	Construct a horizontal bar, vertical bar, pictograph, or tally chart with appropriate labels and title from organized data.
	2	Formulate and answer questions by interpreting and analyzing displays of data, including frequency tables, single bar graphs, or single line graphs.	3	Interpret data found in line plots, pictographs, and single-bar graphs (horizontal and vertical).
			4	Answer questions based on data found in line plots, pictographs, and single-bar graphs (horizontal and vertical).
			5	Formulate questions based on graphs, charts, and tables to solve problems.
			6	Solve problems using graphs, charts and tables.
		REMOVED	1	Formulate questions to collect data in contextual situations.
2. Probability		**No performance objectives at this grade level.**		
	M04-S2C2-01	**Moved to Grade 4**	1	Name the possible outcomes for a probability experiment.
			2	Make predictions about the probability of events being more likely, less likely, equally likely or unlikely.
	M05-S2C2-02	**Moved to Grade 5**	3	Predict the outcome of a grade-level appropriate probability experiment.
			4	Record the data from performing a grade-level appropriate probability experiment.
			5	Compare the outcome of an experiment to predictions made prior to performing the experiment.
			6	Compare the results of two repetitions of the same grade-level appropriate probability experiment.

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MATHEMATICS CROSSWALK
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Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
3. Systematic Listing and Counting	1	Represent all possibilities for a variety of counting problems using arrays, charts, and systematic lists; draw conclusions from these representations.	1	Make a diagram to represent the number of combinations available when 1 item is selected from each of 3 sets of 2 items (e.g., 2 different shirts, 2 different hats, 2 different belts).
	2	*Solve a variety of problems based on the multiplication principle of counting.*		
4. Vertex-Edge Graphs	1	Color complex maps using the least number of colors and justify the coloring.	M00- to M05-S2C1-01	Color pictures with the least number of colors so that no common edges share the same color (increased complexity throughout grade levels).
	2	*Investigate properties of vertex-edge graphs • circuits in a graph, • weights on edges, and • shortest path between two vertices.*		
	3	*Solve problems using vertex-edge graphs.*		

Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Patterns	1	Recognize, describe, extend, create, and find missing terms in a numerical sequence.	2	Extend a grade-level appropriate repetitive pattern (e.g., 5, 10, 15, 20, . . . rule: add five or count by five's.
			3	Solve grade-level appropriate pattern problems.
	2	Explain the rule for a given numerical sequence and verify that the rule works.	1	Communicate a grade-level appropriate iterative pattern, using symbols or numbers.
2. Functions and Relationships	1	Recognize and describe a relationship between two quantities, given by a chart, table or graph, in which the quantities change proportionally, using words, pictures, or expressions.	1	Describe the rule used in a simple grade-level appropriate function (e.g., T-chart, input/output model, and frames and arrows).

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Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
	2	*Translate between the different representations of whole number relationships, including symbolic, numerical, verbal, or pictorial.*		
3. Algebraic Representations	1	*Record equivalent forms of whole numbers to six digits by constructing models and using numbers.*		
	2	Use a symbol to represent an unknown quantity in a given context.	1	Use variables in contextual situations.
			M01- to M02-S3C3-01	Use variables in contextual situations.
	3	Create and solve simple one-step equations that can be solved using addition and multiplication facts.	2	Solve equations with one variable using missing addends to sums of 18 (e.g., □ + 9 = 18, 9 + □ = 18); and using minuend through 18 (e.g., 18 - □ = 9, 18 - 9 = □).
4. Analysis of Change		**No performance objectives at this grade level.**		
	M04-S3C4-01	**Moved to Grade 4**	1	Identify the change in a variable over time (e.g., an object gets taller, colder, heavier).
	M04-S3C4-01	**Moved to Grade 4**	2	Make simple predictions based on a variable (e.g., increases in allowance as you get older).

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Geometric Properties	1	*Describe sequences of 2-dimensional figures created by increasing the number of sides, changing size, or changing orientation.*		
	2	Recognize similar figures.	4	Recognize similar shapes.
			M04-S4C1-07	Identify similar shapes.
	3	Identify and describe 3-dimensional figures including their relationship to real world objects: sphere, cube, cone, cylinder, pyramids, and rectangular prisms.	2	Name concrete objects and pictures of 3-dimensional solids (cones, spheres, and cubes).
			M04-S4C1-02	Identify models or illustrations of prisms, pyramids, cones, cylinders, and spheres.
	4	Describe and compare attributes of two- and three-dimensional figures.	3	Describe relationships between 2-dimensional and 3-dimensional objects (squares/cubes, circles/spheres, triangles/cones).
		REMOVED	1	Build geometric figures with other common shapes (e.g., tangrams, pattern blocks, geoboards).
	M03-S4C2-02	**Moved to Strand 4 Concept 2**	5	Identify a line of symmetry in a 2-dimensional shape.
2. Transformation of Shapes	1	Identify a translation, reflection, or rotation and model its effect on a 2-dimensional figure	1	Recognize the same shape in different positions (turn/rotation).
			M04-S4C2-01	Demonstrate translation using geometric figures.
			M05-S4C2-01	Demonstrate reflections using geometric figures.
	2	Identify, with justification, all lines of symmetry in a 2-dimensional figure.	M03-S4C1-05	Identify a line of symmetry in a 2-dimensional shape.
			M04-S4C1-08	Draw a 2-dimensional shape that has line symmetry.

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
			M05-S4C1-13	Identify the lines of symmetry in a 2-dimensional shape.
			M06-S4C1-09	Draw a 2-dimensional shape with a given number of lines of symmetry.
3. Coordinate Geometry		**No performance objectives at this grade level.**		
	M04-S4C3-01	**Moved to Grade 4**	1	Identify points in the first quadrant of a grid using ordered pairs.
4. Measurement	1	Determine elapsed time • across months using a calendar • by hours and half hours using a clock.	3	Determine the passage of time across months (units of days, weeks, months) using a calendar.
			M02-S4C4-04	Determine the passage of time using units of days and weeks within a month using a calendar.
			M04-S4C4-02	Compute elapsed time using a clock (e.g., hours and minutes since or until…) or a calendar (e.g., days, weeks, years since or until…).
	2	Apply measurement skills to measure length, weight, and capacity using US Customary units.	1	Select the appropriate measure of accuracy: • length – centimeters, meters, kilometers, • capacity/volume – liters, and • mass/weight – grams.
			4	Measure a given object using the appropriate unit of measure: • length – centimeters, millimeters, meters, kilometers, • capacity/volume – liters, and • mass/weight – grams.
			8	Compare the length of two objects using U.S. customary or metric units.

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
	3	Convert units of length, weight, and capacity • inches or feet to yards, • ounces to pounds, and • cups to pints, pints to quarts, quarts to gallons.	6	Compare units of measure to determine more or less relationships for: • length – inches to feet; centimeters to meters, • time – minutes to hours; hours to days; days to weeks; months to years, and • money – pennies, nickels, dimes, quarters, and dollars.
			7	Determine relationships for: • volume – cups and gallons, • weight – ounces and pounds, and • money – extend to amounts greater than one dollar.
	4	Determine the area of a rectangular figure using an array model.	10	Represent area using a rectangular array.
	5	Measure and calculate perimeter of 2-dimensional figures.	9	Determine the perimeter using a rectangular array.
	M02-S4C4-01	**Moved to Grade 2**	2	Tell time with one-minute precision (analog).
	M02-S4C4-03	**Moved to Grade 2**	5	Record temperatures to the nearest degree in degrees Fahrenheit and degrees Celsius as shown on a thermometer.

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Strand 5: Structure and Logic				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Algorithms and Algorithmic Thinking		**No performance objectives at this grade level.**		
	M03-S5C2-02	**Moved to Strand 5 Concept 2**	1	Discriminate necessary information from unnecessary information in a given grade-level appropriate word problem.
2. Logic, Reasoning, Problem Solving, and Proof	1	*Analyze a problem situation to determine the question(s) to be answered.*		
	2	Identify relevant, missing, and extraneous information related to the solution to a problem.	M03-S5C1-01	Discriminate necessary information from unnecessary information in a given grade-level appropriate word problem.
	3	*Select and use one or more strategies to efficiently solve the problem and justify the selection. *		
	4	*Determine whether a problem to be solved is similar to previously solved problems, and identify possible strategies for solving the problem. *		
	5	*Represent a problem situation using any combination of words, numbers, pictures, physical objects, or symbols. *		
	6	Summarize mathematical information, explain reasoning, and draw conclusions.	1	Draw conclusions based on existing information (e.g., All students in Ms. Dean's 1st grade class are less than 7 years old. Rafael is in Ms. Dean's class. Conclusion: Rafael is less than 7 years old.).
	7	*Analyze and evaluate whether a solution is reasonable, is mathematically correct, and answers the question. *		
	8	*Make and test conjectures based on data (or information) collected from explorations and experiments. *		

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